

SECRET



25X1

PAR 223


1 June 64

SUBJECT: Monochromatic Lens System

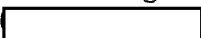
TASK/PROBLEM

1. To explore the possibilities of the improvement of the optical systems by restriction of the wavelength range of the lens correction.

DISCUSSION

2. The possibility of this problem was discussed in the  Project Conference of 3 and 4 February 64. At that time, we suggested that specific optical system requirements should be considered as test cases for this study. On 26 February, we received a specification describing two definite requirements for spectral regions outside the visible spectrum. On 15 April the contractor's representative visited the customer's facility to discuss these problems in further detail. At that time, the possibility of a lens design in the visible spectrum was added to the two above for consideration.

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3. During May, the contractor's representative discussed the problem of a 6X zoom lens design with a lens designer in his organization. The designer felt the three wavelength regions  (visible) represent separate design problems. The most urgent need should be explored first. Zoom systems with a 10:1 magnification range have been designed and the restriction of wavelength range might improve the image quality to the required level. An actual design program would be necessary to learn what levels of distortion and image quality could be achieved.

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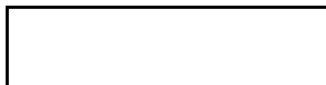
4. Enlarged computer facilities will be installed in the contractor's plant by September 64 and an "automatic" design program for variable focus lenses is being written and may be available about February 65. This design program would be very useful in exploring the proposed 10 zoom lens system.

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5. It appears that for a definite amount of effort, the feasibility of achieving the required image quality can be determined. The likelihood of achieving the required quality cannot be predicted before completion of such a study.

PLANNED ACTIVITY

6. We expect to submit a proposal during June or July 64 for a design study of a 6X to 60X zoom projector lens system, UV range as indicated by the customer as being of first interest. The actual design work would await completion of the automatic design programs.

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